ON THE USE

OF

ANÆSTHETICS IN MIDWIFERY.

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It is now nearly fourteen years since the first use of an anæsthetic agent in obstetric practice. It does not come within the province of this paper to give a history of the discovery of anæsthesia, or of the progress which it made, or of the objections which were at first urged to its use in midwifery. It was at first opposed both on moral and scientific grounds. Even physicians joined in the popular objection that to relieve woman from the pains and pangs of labor was immoral and opposed to the express commands of Scripture, because it was said, "In sorrow thou shalt bring forth children." But, as Dr. Murphy pertinently remarks, "Man continues to dine as comfortably as his means permit, notwithstanding it was said, 'Cursed is the ground for thy sake; in sorrow shalt thou eat of it all the days of thy life:'" and I think I may safely say, that the moral objections to the use of anæsthetics are now no longer urged. Many of the scientific objections to their use, founded purely on *à priori* reasoning, have now been proved by clinical expe-

rience to be groundless. We no longer hear it urged, "that the pain of natural labor should not be annulled, because it is calculated to promote the safety of the mother;" or that "it is a physiological relative of the power or force, and the culminating point of the female somatic forces."

It is no longer insisted "that the mother does not encounter danger to her health or life from the endurance of the pains," or that in operative midwifery, especially in forceps operations, anæsthesia should not be resorted to, because "the sensations of the patient afford us our best aid for the introduction of the instruments." We now never hear it said, at least by intelligent men, "that the use of chloroform in labor leads to the development of puerperal mania or puerperal fever." The time for *à priori* reasoning on this subject has gone by. From the many thousand cases in which anæsthesia has been induced in midwifery, it would seem that clinical experience ought to be able to settle all questions as regards the safety of anæsthesia, the choice of the agent to be used for this purpose, the indications for its use, its effect and value in each special indication, and that the proper and safe mode of administration of the special anæsthetic selected should be distinctly formularized. Yet at this day, were a young physician at the commencement of his professional career seriously to set himself to work to get a clear idea of the principles which should govern his practice, by a careful study of all the recent standard text books, and of the papers which have been read and the discussions which have taken place before the learned medical societies in different parts of the world, he would find such a diversity of opinion on the part of those whom he had been accustomed to regard as authority, and such a want of everything like settled principle as to the indications for or against the use of anæsthetics, that his mind would surely be left in doubt and confusion. Let him take up, for example, the most recent work by one of our own number, excellent as it is in most respects, he will find, after the announcement that "labor is unquestionably a natural process * * * which should be designated, in strict physiological language, a function," the question is asked whether it is "right to interfere with a function, properly so called, as long as its exercise is normal and within the true record of nature." The answer given is, "I think not."

Again, as an argument why anæsthesia should not be employed in a natural parturition, it is said, "The female, at the most interesting period of her life, the time of labor, should, all other things being equal, have her mind unclouded, her intellect undisturbed, her judgment fully adequate to realize and appreciate the advent of a new and important era in her existence—the birth of her child." It is true, a very judicious list of exceptional contingencies is then enumerated, which would *justify* the accoucheur in the administration of an anæsthetic; but they are enumerated as exceptions, and taken in connexion with the author's definition of natural labor in the first part of the volume, the impression left would be one of great doubt and uncertainty as to the propriety of anæsthetics in midwifery.

If he then should examine the most recent English work, he would find chloroform mentioned incidentally as an agent which might be used with advantage in rigidity of the os uteri, in puerperal mania, in convulsions, in forceps cases, and in turning. He would find, also, valuable additional suggestions by the American Editor in regard to its use.

If he then consults the best of the modern French text books, while he finds it asserted that "Accoucheurs who have often used chloroform are almost unanimous in the declaration that it has never had the least mischievous effect upon the mother's health, whilst in all cases it has spared them the sufferings of the last expulsive pains." And again, "whatever difference of opinion may still remain respecting the influence of chloroform upon the health of the mother, no one doubts its entire innocence as regards the fœtus;" and "that it is especially useful in calming the extreme agitation and mental excitement which labor often produces in very nervous women, in those cases in which labor appears to be suspended or retarded by the pain occasioned by previous disease, or such as may supervene during labor, and particularly indicated by those irregular or partial contractions, which, notwithstanding the intense and almost constant pain which they occasion, have no effect to advance the labor in spasmodic contraction and rigidity of the cervix uteri, in eclampsia, and in the various obstetrical operations"—still he will find the question suggested whether these advantages are not counterbalanced by serious inconveniences, and whether we are authorized to subject a patient to danger, in

order to spare intense suffering, when the regular accomplishment of a function is concerned.

In examining the leading Medical Journals, he finds such high authorities as Dr. Barnes, of London, asserting "that he had witnessed such exceeding prostration, after giving chloroform to facilitate the extraction of an adherent placenta, as for three hours afterwards to make him and another practitioner, who assisted, apprehensive of the instant death of the patient;" —that "in ordinary forceps cases, chloroform was not required either to facilitate the operation or to allay pain;" that "under ordinary circumstances, turning could not be regarded as a severe or painful operation, and that in many cases chloroform did not facilitate the operation." He finds Dr. Tyler Smith declaring that "he believed post partum hemorrhage and retention of the placenta occurred more frequently after its use than without it, and that it is contra-indicated where there was deficient action of the uterus, as in feeble and tardy labour from inertia and in cases where hemorrhage was expected;" while Dr. Kidd, who professes to speak from an experience "of 360 cases of midwifery attended or treated under ether, and 1700 under chloroform," regarded it "as invaluable where there is exhaustion, debility, or shock, the result of great or long continued pain,"—the very class of cases where we have the most reason to dread and anticipate hemorrhage.

In short, the effect of all this study of authorities upon the young practitioner would probably be to bring his mind to the same result as the Scotchman arrived at, who had heard many sermons on free-will and predestination: "you can and you can't, you will and you wont, you shall and you shan't, you'll be damned if you do, and you'll be damned if you don't."

The experience of no one individual is sufficient to decide all of the points before alluded to, yet the accumulated observations of all who have had large opportunities will eventually contribute to as fixed principles and rules of practice as can in the nature of things be secured in the science of medicine.

In the minds of most medical men, the danger involved in the use of anæsthetic agents is the grand question above all others. And here permit me to say, that the danger from their use in midwifery is a question altogether distinct and

apart from that of their use in surgery. There has not yet been reported, nor is there any reason for believing that a single death has ever occurred, in midwifery practice from the use of *any* anæsthetic agent, where it has been administered by a medical man; and without being able to give statistical evidence in proof of the assertion, I will express my firm conviction, that it has been administered a greater number of times in obstetric than in surgical practice. There are sound and patent physiological reasons why its use should be much less dangerous in the former than in the latter practice.

1st. The conditions under which they are administered are entirely different. In surgery the anæsthetic is used to give relief from an *anticipated* suffering. In obstetrics it is used to destroy pain already existing. There is no law better known in medicine than that the tolerance of narcotics and anodynes bears a certain relation to the intensity of the pain. One suffering from peritonitis or colic can safely and with advantage take a quantity of opium which would be sure to destroy the life of the same individual when in health. For this reason the risk from such an agent must be very much less in obstetrics than in surgery.

2d. The emotional condition of the subject under the two circumstances differs materially: in the one case tending to weaken nerve force and depress the vital powers, and in the other to secure tolerance of such an agent by stimulating and supporting the same elements. I do not stop here to discuss more fully the influence of the emotions as affecting the vital functions, although it is a subject of great importance, and one well worthy the careful study of every practical man. For my present purpose, I think that the mere statement of the proposition is sufficient to secure its acceptance by every mind. When a subject is about to submit to any painful operation, and an anæsthetic is proposed, there is always more or less dread and apprehension as to the result, to which is often added an anxiety with regard to the effect of the anæsthetic, whether it will really destroy all consciousness of pain; and if so, whether it will not also destroy life. But in midwifery, the overwhelming desire is to be relieved from the recurrence of the pains, and when the effect of the anæsthetic has once been

experienced, it is again sought for with the greatest avidity and confidence.

3d. In midwifery, it is ordinarily unnecessary to carry the anæsthetic to the extent to which it is absolutely essential in surgery. In the former, it may frequently be carried to the extent of diminishing or destroying sensation, while consciousness is retained; or, if sleep is induced, it is tranquil, not stertorous. But in surgery, it is absolutely requisite that the patient be perfectly still; and the anæsthetic must be carried to the extent of complete sopor, the test of which is heavy snoring. Even if it be requisite to carry it to this extent in obstetrical practice, as it may be in some cases of natural labor, and ordinarily where operative measures, either manual or instrumental, are demanded, the two conditions which have been before mentioned as greatly modifying the danger from the anæsthetic, still remain. Furthermore, it may be added that the system is prepared by the previous use of the agent in a less degree, because there is now no emotional resistance to the effect of the anæsthetic.

For these reasons, as well as from clinical experience, I never feel the least anxiety in administering an anæsthetic in obstetric practice, while I cannot divest myself from more or less apprehension when asked to do this by my surgical friends, or by my patients when dental operations are to be performed. Hence I feel warranted in asserting that the question of anæsthetics in surgery is altogether distinct from anæsthetics in midwifery.

In this paper I propose to consider exclusively the latter subject. As regards the anæsthetic agent, my remarks will especially refer to chloroform, as this is the agent in which I have had by far the larger experience, and I very much prefer it to any other. My reasons for preferring chloroform to sulphuric ether are the following:

1st. Its odor is to most persons much more agreeable, and it is much less persistent. When sulphuric ether is used, it frequently at first produces more or less irritation of the bronchi, and an annoying cough or choking is excited. The effect of this is bad, both on the patient and the surrounding friends. It excites apprehension, which more or less tends to counteract the influence of the agent from emotional causes. In the

lying-in room everything should be quiet and tranquil, and confidence should be inspired instead of anxiety. It is true, this influence is but temporary, but it is better to dispense with it, if possible. If sulphuric ether is used for any length of time, as is often necessary in obstetric practice, the room becomes filled with the disagreeable vapor, the inflammable character of which is a consideration not altogether to be disregarded.

2d. A much less quantity of chloroform is required, and its effects are much more rapid. In midwifery this is a very great advantage, for we are saved in a great majority the preliminary stage of excitement which the ether produces, and we are able to use the agent for each recurring pain, the patient in the interval being comparatively free from the influence of the anæsthetic. Thus, in the aggregate, not only is a much less quantity of the agent required, but the patient is exposed to the danger from the anæsthetic, if any danger there be, for a much shorter period of time.

3d. By chloroform we are able to regulate the *degree* to which we may desire to carry anæsthesia with a certainty and security that is not possible with the ether. In surgery this argument can have no weight, because it is always necessary to induce complete anæsthesia; but in midwifery, as has already been stated, this is not desirable. On the contrary, it is generally to be avoided.

These reasons will be deemed by all sufficient for the preference, if it be conceded that the two agents are equally safe. Now as chloroform has been used in many thousand cases of midwifery practice, and there is an absence of all proof that in a single instance has death resulted from it, I think we have in the above reasons good *à priori* ground for believing that it is the more safe of the two agents. The above remarks will apply with equal force to chloric ether; for I presume no one will claim that chloroform diluted with alcohol must be more safe than chloroform diluted with atmospheric air.

In the following remarks, I shall aim to point out the indications for the use of anæsthetics in midwifery, and their effect and value in each special indication. The clinical experience on which they are based are 786 cases, occurring as follows:

In 1848	9 cases,	Sulph. Ether.	
" 1849	62 "	" "	18, Chlo. 44.
" 1850	17 "	Chloroform.	
" 1851	34 "	"	
" 1852	37 "	"	
" 1853	42 "	"	
" 1854	56 "	"	
" 1855	52 "	"	
" 1856	74 "	"	
" 1857	81 "	"	
" 1858	84 "	"	
" 1859	82 "	"	
" 1860	84 "	"	
" 1861	72 "	"	
Total,	786	Chlor., 759; Sulph. Ether, 27.	

Of these, 577 were cases of natural labor occurring in my private practice. The others will be classified under their appropriate heads, and were either cases of difficult labor in my private practice, or in my obstetric service at Bellevue Hospital, or were seen by me in consultation.

In a majority of these cases of natural labor, the chloroform was not carried to the extent of inducing profound anæsthesia. The chloroform was exhibited with the recurrence of pain in such a quantity as to destroy the sensation without overcoming consciousness. The length of time under which patients were kept under its influence varied from half an hour to, in one instance, over twenty-four hours. In most patients, the inhalations were not commenced until the second stage of labor; but where any special indications existed, it was given any time during the first stage.

The general physiological phenomena of anæsthesia in midwifery have been so fully and so accurately described by Professors Simpson, Murphy, and others, that I shall not detain the Academy with a recapitulation of them. The psychological phenomena have seemed to depend greatly on the antecedent condition of the patient's mind. If the chloroform was administered solely to relieve pain, and she had no apprehension in regard to danger from its use, consciousness was frequently

retained, or a quiet and tranquil sleep filled up the intervals between each recurrence. But if she had been previously nervous, irritable, and hysterical, bearing her pains badly, or she had serious apprehensions as regards the effects of the chloroform, excited by accounts she had heard of its dangers, she may at first manifest great excitement by talking with great volubility, complaining loudly, and weeping hysterically: but by enforcing the strictest quietude in the room, forbidding all noise and conversation, and at once carrying the patient into the state of profound anæsthesia, this condition is soon overcome, and when once overcome, the degree to which the anæsthesia is carried may be speedily reduced. I may mention here that I never have, in a single instance in obstetric practice, witnessed the slightest erotic manifestation while a patient has been either partially or completely under the influence of an anæsthetic. I allude to this because it has been urged with great effect as an objection against its use.

The influence of chloroform on the duration of labor is a consideration of a good deal of importance. In a certain class of cases, I am convinced that its effect is undoubtedly to prolong the labor. These cases constitute a minority, and even in them, I have not been satisfied that this apparent objection was not more than counterbalanced by the advantages obtained from its use. In the first stage, I have seen but two cases in which it seemed to retard the process of dilatation. In both of these, I felt obliged to continue its use because, if the patient was allowed to come out from under the influence of the inhalation, threatening symptoms of convulsions would at once be developed. Yet for many hours the uterine contractions would seem to be arrested at once by the inhalation of the chloroform. In one the chloroform was used eleven hours during the first stage, and in the other twenty-three hours. The first was delivered by forceps at the end of two hours after the second stage commenced, because the symptoms of eclampsia became more and more marked. In the other, the labor terminated naturally, the second stage lasting five hours and a half. I remained with this patient three hours after the child was delivered. But two hours after I left her she had a violent attack of eclampsia. In the second stage the chloroform seems to retard the labor in a much larger number of

cases. In this stage the uterine contractions are assisted by the action of the accessory muscles, which are partly voluntary, and partly involuntary. These accessory muscles are the abdominal and pelvic, which are brought into action by the pressure of the child upon the irritating structures of the pelvic cavity, which are abundantly supplied with spinal nerves, and thus active reflex action is excited. I am not absolutely certain but that in some instances the forceps have been made necessary from this cause; but I have never yet had reason to regret the use of the anæsthetic on this account.

But in a large majority of cases, my experience would lead me to the conviction that the use of chloroform shortens labor. I will mention in detail the conditions under which it apparently produces this result.

1st. In all those cases where inefficient uterine action results from loss of sleep, and exhaustion from a prolonged first stage. I have had this fact absolutely demonstrated as in the following case; as well as in many others less striking.

Nov. 6th. 1849.—Case. The patient, a primipara, was in the first stage of labor eighteen hours. The second stage commenced with very active and efficient uterine contractions; but after a duration of six hours, they commenced to become irregular in their recurrence, and gradually decreased in their efficiency and force until they almost entirely ceased. The head was pressing the perineum without distending it. By auscultation, I found that the sounds of the fœtal heart were becoming more feeble, and increasing in frequency; and on account of the child I determined to deliver by the forceps. This was at an early date in the use of chloroform, and my patient had a great dread of losing her consciousness, but she had a still greater apprehension in regard to the use of instruments. As preparatory then to their use, she consented to inhale chloroform, and came rapidly under its influence, when to my great surprise the uterine contractions were at once resumed with great force and efficiency, and the child was born in twenty minutes after she commenced the inhalation of the chloroform. It was at first asphyxiated, but I succeeded in resuscitating it. Since that time, I have repeatedly seen the chloroform act quite as efficiently as an oxytoxic under analogous circumstances as I have seen the ergot. I have recently had a

most instructive case, which has furnished a new illustration on this point.

Case.—This patient was a primipara also, aged twenty-two, of great moral courage and self-control. She therefore did not send for me until after the first stage was entirely completed, when I learned that she had suffered from regular recurrent pains, sufficient to entirely prevent sleep for more than twenty-four hours. After ascertaining the presentation and position, I at once administered chloroform, for the purpose of relieving pain and inducing sleep. A very little sufficed for this purpose, and the labor progressed very slowly but steadily for three hours. After this time, the pains continued with apparently the same force, but the head did not advance. I continued the chloroform for two hours without any change, and then entirely ceased to give it for one hour—the only effect of which was to keep her awake and permit her to suffer, while the force of the uterine contractions did not increase. I then resumed the chloroform for three hours, the head still remaining precisely in the same position. I now determined to deliver by the forceps. Up to this time the chloroform had been used only to the extent of relieving pain and producing a tranquil sleep in the interval. As preparatory to the instrumental delivery, I now carried the chloroform to the extent of profound sopor; when at once most active uterine contractions supervened, and three pains were sufficient to complete the delivery of the head. I might multiply my illustrations of this effect by the history of similar but less striking cases, but the above are sufficient to establish the point which I here wish to make.

2d. In rigidity of the os uteri and perineum.

In regard to these two points, we find quite a diversity of opinion on the part of obstetricians who are in the habit of using chloroform in midwifery: some asserting that it has a direct influence in effecting relaxation of these tissues, while others affirm that they have not been able to discover that it exerts any influence in that respect. The first condition causes delay in the first stage of labor, and the second delay in the second. I believe the fact to be that chloroform exerts a most decided influence in overcoming this obstacle in one class of cases, while it produces no effect on the other. Rigidity of the os results from

two entirely different conditions, one of which is speedily relieved by the action of chloroform, while I am not certain that it exerts any special influence on the other. In the one case, it is due to reflex irritation producing spasmodic contraction, which readily gives way when the patient is brought under the influence of the anæsthetic. In the other, it is the result of an antecedent inflammation, with an exudative deposit in the areolar tissue, which only yields by a laceration, or what is very much better, an operative procedure, incision.

In those cases where it is the internal orifice which, by its retraction, retards the delivery, the chloroform almost invariably obviates the necessity of the forceps. I think this fact is quite sufficient to counterbalance the objection before alluded to, that it may in some rare cases create the necessity for these instruments.

But this point becomes still more manifest when we refer to resistance of the perineum as a cause of retarded labor. No one condition, especially in primiparæ, is so frequent a cause for the necessity of resorting to the forceps. This, like rigidity of the os, results from two quite different conditions. One where it depends upon an excessive contraction of the muscular fibres that enter into its composition. This obstacle the chloroform invariably overcomes. In the other case, it is due to the presence of so great a quantity of adipose tissue as to render this position of the pelvic wall too inextensible to permit the escape of the head. Here the chloroform will have no direct influence in accelerating the progress of the labor.

3d. The chloroform shortens the duration of a labor in all that class where the pains are diminished or suspended by vivid moral impressions or hysteria; or by pains resulting from the coincidence of some malady, either existing antecedent to or appearing during labor; such as rheumatism of the uterus or other muscular tissues, or sharp pains in the back or abdomen, gripings in the intestines, and the cramps which are occasionally produced by the pressure of the child's head on the sacral nerves. It is unnecessary for me to enlarge upon this point, as the reasons why the chloroform should in all such cases accelerate labor will be sufficiently obvious.

On the whole, then, I am obliged to state my conviction that chloroform accelerates labor in a greater number of cases than it retards it.

I have formerly been in the habit of teaching that chloroform should not be used in face and breech presentations, unless there were some special indications for resorting to it, on account of danger to the mother; as the safety of the child turns in a great measure, in these cases, on the shortness of the second stage of labor. I have now somewhat modified my opinion in this respect, and inculcate the principle that it should be used in those cases unless there are special indications to the contrary: for the patient is much better prepared for operative procedures, should they be required in order to hasten delivery to save the child. The indication to the contrary will be inferred from what has been said before, viz. where the assistance of the accessory muscles of parturition is arrested by the action of the anæsthetic.

The value of anæsthetic aid in operative midwifery, both manual and instrumental, is much more generally conceded, than in cases of natural labor. Still, it will be found that there is here a great diversity of opinion among obstetricians.

Forceps Cases.—Nearly all who have had a large experience in the use of chloroform in midwifery agree as to the propriety and value of this aid where delivery by forceps is necessary. There are some, however, who do not deem it necessary either to facilitate the operation or to allay pain. Others again do not resort to the anæsthetic until the blades have been applied. In private practice, in consultation cases, and in the obstetric service of Bellevue Hospital, I have applied the forceps in one hundred and thirty-two cases, where the patient has been under the influence of chloroform. In only one case, since 1848, have I delivered by the forceps without this aid, and in this instance the patient was comatose from an attack of eclampsia. The operation is accomplished with much greater ease to the accoucheur, and safety to the patient, if properly performed. If all due precautions are taken in introducing and locking the blades, the danger of injury to mother and child is greatly decreased, because the perfect quietude and tranquillity of the patient is secured, and the operation can be performed with the greatest deliberation and carefulness, which is often impossible when the patient is under great excitement. Especially is this the case with regard to the safety of the perineum.

Version.—My experience is limited to twenty-three cases. The advantage of chloroform in such cases may be thus succinctly stated. There is much less resistance to the introduction of the hand; as it is introduced without pain to the patient, it rarely requires to be withdrawn and reintroduced on account of the paralysing effect of the uterine contraction, the external and internal manipulations are much more safely and expeditiously accomplished, and there is less danger of injury to the internal surface of the uterus.

Craniotomy.—I have performed this operation but five times in the last twelve years. Three of these were hospital cases, and two were cases that I saw in consultation with other medical gentlemen. The advantages of anæsthetic aid in such cases are too obvious to require enumeration. I certainly never would perform the operation without it, and regard it as horrible with it.

Cæsarean Operation.—I have performed this operation once, and from my experience in this case and a careful study of all the reported cases accessible to me, I have arrived at the firm conviction that, by means of anæsthesia, the mortality from this operation, when necessary, will be greatly diminished, and that it will be eventually more frequently performed instead of craniotomy, thus saving the life of the child, and affording a greater chance for the life of the mother. To give all my reasons for this opinion would involve a full discussion of the entire subject, which is not pertinent to the subject of this paper.

Removal of Adherent Placenta.—I have been called upon to perform this operation but twice since I have been accustomed to rely upon the aid of an anæsthetic. Its value in these cases is beyond all controversy, and I shall therefore not stop to dwell on this point.

It remains for me to speak of chloroform in the various diseases and accidents which complicate labor. In a former paper which I had the honor to read before this body, by appointment of the Obstetric Section, which has been published in the Transactions of the Academy, I have expressed my views as regards the therapeutic indications for, and the value of chloroform in the treatment of *puerperal convulsions.* As a more enlarged experience has only served to confirm these views, and

has in no degree served to modify them, I will not subject the Academy to the tedium of hearing them repeated. I may simply say that I believe these views are now generally accepted.

In the management of *placenta previa* I have never had occasion to use chloroform. In the cases which I have seen, I did not regard it as judicious or justifiable; but I can readily conceive of cases where it would probably be of the greatest service. For example, if the patient was seen early, before any great shock was produced by a large loss of blood, and the os uteri was dilatable, the indication would be to turn and deliver at once, and here the chloroform would be invaluable.

Laceration of the Perineum.—It is stated by Dr. Tyler Smith that he "has met with bad cases of the rupture of the perineum" under the use of chloroform. "The patients were relieved from pain, but volition was not suspended, and under these circumstances, the violent and fearless straining efforts ploughed up the perineum by the fœtal head in the expulsive pains." All reasoning on the subject would lead to the anticipation that the danger of rupture of the perineum would be greatly diminished by the use of an anæsthetic, but other writers have made statements similar to that of Dr. Smith. None, however, so far as my knowledge extends, have detailed the phenomena of a series of cases or even of one case, so as to enable us to judge whether the anæsthetic was a mere coincident or bore the relation of cause and effect. My own experience would lead to a contrary result, for to the best of my knowledge, anything like a considerable laceration of the perineum has occurred but twice, in all the cases in which I have administered chloroform, one of which would seem to confirm to a certain extent the views of Dr. Smith. The patient was well under the influence of chloroform, and fifteen minutes before the delivery of the head, I had made a careful vaginal examination, and found it still high up in the cavity. I was greatly astonished at the rapid delivery, and no little disgusted to find a fearful laceration of the perineum. Very good union, however, took place without operation. She has been confined twice since this labor, and in both instances the second stage has been unusually long. The other case occurred recently at Bellevue Hospital. The patient was a primipara, thirty-two

years of age, and was delivered by me with the forceps. In this case, by careful measurement, it was found that the occipito-mental diameter of the fœtal head was six and five-eighths inches, one and one-eighteenth inch beyond the ordinary normal measurement. I may be pardoned for mentioning one extraordinary incident connected with this case—the patient came near dying from hemorrhage, not from the uterus but from the lacerated vessels of the perineum. Both mother and child have, however, since done well.

Post Partum Hemorrhage.—It is stated by several authors that the liability to this accident is manifestly increased by the use of an anæsthetic in labor; yet here, as in the preceding accident, there is an entire absence of anything like statistical evidence that this is the fact. In my own private practice I have not met with a single instance of this occurrence, but I have seen quite a number of cases where this has occurred in the practice of others, and where no chloroform has been used. I do not ascribe the exemption which I have had entirely to the use of chloroform, although I do regard it as having exerted a manifest influence in this regard. The great security against post partum hemorrhage lies in the efficient and permanent contraction of the uterus after delivery. What is termed uterine inertia, is often but another name for uterine exhaustion, and this must certainly be much less likely to occur where the nerve force and vital powers have been saved by the use of an anæsthetic. It seems to be believed by some that the effect of anæsthetics is to depress the vital powers, and if this were true, post partum hemorrhage would inevitably occur more frequently after their use. A Committee of the Boston Society for Medical Improvement have just made a Report on the alleged dangers which accompany the inhalation of the vapor of sulphuric ether. The Report is one of great value and interest, although none of its statistics and little of its reasoning will apply to the subject of this paper. In summing up their general conclusions, the first statement of the Committee is, "The ultimate effects of all anæsthetics show that they are depressing agents. This is indicated both by their symptoms and by the results of experiments," &c. It seems to me that this statement needs to be greatly modified, in order to express a scientific truth. Under certain circumstances and conditions, anæsthetics are in no

sense depressing agents, but their effects are quite the contrary. I will illustrate the truth of this assertion by two striking examples. In 1853, I administered chloroform in Brooklyn, to a patient of Prof. Carnochan, on whom he performed the operation of tying the external iliac, on account of an aneurism which extended from the origin of the femora profunda upwards, below Poupart's ligament, as far as the middle of the external iliac artery. Previous to the administration of the chloroform, the patient was in an extremely prostrate condition, probably due principally to emotional causes. The lips were pallid, the surface was cold, and the pulse very rapid, thread-like, and feeble, and I was exceedingly apprehensive as to the effects of the anæsthetic. But after the inhalation, the surface became warm, the pulse full and equable; and during the whole operation its frequency was not eighty-four beats in a minute.

In 1858, a patient was brought into Bellevue Hospital, who had suffered from a severe burn of the leg, the whole tissue of the lower part of the leg being destroyed, and the knee joint entirely denuded of all flesh. It happened to be just the hour of my clinic, and Prof. J. R. Wood, who had decided to amputate immediately, requested me to administer sulphuric ether. For reasons which I then assigned, I declined to administer ether, but I proposed chloroform, to which Dr. Wood assented. The patient was at this time suffering fearfully from the shock. Hardly any pulse could be perceived at the wrist, the surface was cold, and he was violently delirious. Dr. Wood amputated before a large number of students and medical men. As soon as the patient came under the influence of the chloroform, reaction came on, heat of surface returned, the pulse became natural as to its force and fulness, the patient was perfectly quiet, with a smile on his face, and remained so the whole time that he was under the influence of the anæsthetic. Now such facts as these, although perhaps not so striking, are familiar to every one who has had much experience in anæsthetics, and I think they conclusively show that the statement of the Boston Committee should be essentially qualified.

Effects of Anæsthetics on Puerperal Convalescence.—It is very generally asserted that convalescence is much more rapid where an anæsthetic has been used during labor, but the physio-

logical changes implied in the term puerperal convalescence, such as the involution of the uterus, and the restoration to their normal state of the other parts involved in the process of parturition, can in no possible degree be accelerated by the use of chloroform.

But as a rule, the general condition of the patient for the first few days immediately succeeding labor, is beyond all doubt much better where the anæsthetic is used than where it is not. I have never had a patient suffer from headache, delirium, vomiting, and the various other unpleasant sequelæ which have been ascribed to this agent. This may be partly due to the article which I have used. With very few exceptions, I have only used Duncan and Flockhart's or Squibb's chloroform.

In conclusion, I submit the following propositions as a basis for the discussion of the Academy:

1st. Anæsthetic aid is of the greatest value in the obstetric art, and chloroform is generally the preferable agent for this purpose.

2d. It exerts no injurious effect, when properly administered, upon the health of either the mother or the child.

3d. It is perfectly justifiable to use chloroform in natural labor, solely for the purpose of relieving pain.

4th. It is especially useful in calming the extreme agitation and mental excitement which labor often produces in very nervous women.

5th. It should be administered in those cases of natural labor, where the progress is suspended or much retarded by the pain occasioned by previous diseases, or such as may supervene during labor, and in those cases where the irregular and partial contractions occasion intense and almost constant pain, but have no effect to advance the labor.

6th. It is of great service in spasmodic contraction and rigidity of the cervix uteri, in tetanic rigidity of the perineum, in certain forms of puerperal convulsions, and in the various obstetrical operations.